

## **HOT SWITCHABLE VOLTAGE BUS FOR IDDQ CURRENT MEASUREMENTS**

### **ABSTRACT OF THE DISCLOSURE**

[00040] A voltage island system including a hot-switchable voltage bus for IDDQ current measurements. The voltage island system includes a plurality of voltage islands ( $V_1, V_2, \dots, V_n$ ), a global power system, and a quiescent power system. The global power system includes a plurality of on-chip global header devices ( $H_1, H_2, \dots, H_n$ ) for selectively providing a voltage  $VDD_g$  to the plurality of voltage islands in response to global header control signals ( $x_1, x_2, \dots, x_n$ ), respectively. A global  $VDD_g$  power supply provides power to the global header devices ( $H_1, H_2, \dots, H_n$ ) via a  $VDD_g$  power distribution grid/bus. The quiescent power system includes a plurality of on-chip quiescent header devices ( $H_{1q}, H_{2q}, \dots, H_{nq}$ ) for selectively providing a quiescent voltage  $VDD_q$  to the plurality of voltage islands in response to quiescent header control signals  $x_{1q}, x_{2q}, \dots, x_{nq}$ , respectively. A quiescent  $VDD_q$  power supply provides power to the quiescent header devices via a  $VDD_q$  power distribution grid/bus.